IMO SUB-COMMITTEE ON SHIP DESIGN & CONSTRUCTION (SDC 10), 22 – 26 JANUARY 2024

The IMO Sub-Committee on Ship Design & Construction held its 10th Session (SDC 10) in hybrid format (physical/virtual) from Monday 22 through Friday 26 January 2024 under the Chairmanship of Mr Erik Tvedt (Denmark) and his Vice-Chair, Mr Jaideep Sirkar (United States), both of whom were re-elected for the ensuing year. The session was attended by delegations from Member States, Associate Members of IMO, representatives from United Nations and specialised agencies, and Observers from inter-governmental and non-governmental organisations in consultative status.

MEETING AGENDA.

13 Revision of the Interim explanatory notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty (MSC.1/Circ.1369) and related circulars p16/17

14 Biennial status report and provisional agenda for SDC 11 p17/18

15 Election of Chair and Vice-Chair for 2025 p18

16 Any other business p18/19

17 Report to the Maritime Safety Committee

17bis Meeting Achievements p19/20

OPENING REMARKS BY THE IMO SECRETARY-GENERAL.

The recently elected IMO Secretary-General, Mr Arsenio Domingues, welcomed delegates and observers to SDC's tenth session and expressed New Year's Greetings.

He recognised the Sub-Committee's pivotal role in ensuring that IMO regulations provide for ships which are inherently safe by design and construction, including structural safety and stability.

Voicing great concern, Mr Dominguez highlighted the regrettable situation developing in the Red Sea, on this his first meeting as Secretary-General. He expressed strong condemnation on attacks against international shipping in the area, and called for an immediate release of the **Galaxy Leader** and its crew. He went on to repeat three key messages on the situation: that seafarers are innocent victims where safety is paramount; the principle of freedom of navigation should be upheld permitting safe trade of essential goods; and, called for de-escalation of the situation.

This year's World Maritime theme is "Navigating the future: safety first!", underscoring an unwavering commitment to upholding the highest safety standards across all aspects of IMO's regulatory work while facing the challenges of a fast-changing world, in particular with respect to developments in technology, artificial intelligence and new threats facing the shipping industry.

He highlighted the importance of implementing recently approved Revised guidelines on the reduction of underwater radiated noise from ships, a crucial contribution to minimise the adverse effects ship noise has on the marine environment, in particular marine wildlife and indigenous communities. This should include development of an Action Plan to ensure that the revised Guidelines will be applied with a view to not only significantly reducing underwater noise, but also contribute to more energy efficient ships emitting less Green House Gas.

Mr Domingues singled out another important aspect of SDC's work, that of completing the interim guidelines on the second generation intact stability criteria, as well as the

associated Explanatory Notes which are used to assess modern ship designs and their ability to withstand the forces of the sea. He urged the Sub-Committee to continue the process of improving the intact stability criteria in a seaway condition by providing research results and reporting on their practical application. This would ensure that the Interim Guidelines will be reviewed and replaced by a more robust instrument related to intact stability criteria in the near future.

In conclusion, the Secretary-General extended best wishes to delegates and wished them every success in their ensuing deliberations.

WORKING, EXPERT & DRAFTING GROUPS.

Three Working Groups (WG), one Expert Group (EG) and one Drafting Group DG) were formed and chaired as follows:

WG 1 Review of Underwater Noise Reduction Guidelines, Ms. Bornemann Christensen (Denmark).

WG 2 Development of Functional Requirements for SOLAS Chapter II-1, Dr. K. Yoshida (Japan).

WG 3 Revision of Interim Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities after a Fire or Flooding Casualty, Ms. E. Poupaki (Germany).

EG Development of Guidelines for Emergency Towing Arrangements for Ships other than Tankers, Dr. S. Ota (Japan).

DG Amendments to the Guidelines for Construction, Installation, Maintenance and Inspection/Survey of Means of Embarkation and Disembarkation, Mr. T. Theocharis (Marshall Islands).

1 ADOPTION OF THE AGENDA. Prior to adopting the agenda, a number of delegations expressed concern for the safety of ships and their crew following attacks by Houthi rebels on commercial ships in the Red Sea and the Gulf of Aden and commended the Secretary-General's effort in bringing this to the attention of the United Nations Security Council at its special session on 3 January 2024. Delegations that took the floor condemned the acts against commercial ships and seafarers while expressing grave concern for the region and the disruption caused to international trade. A number of delegations, having highlighted the devastating impact such attacks had on innocent seafarers, especially those on board the **MV GALAXY LEADER** which were still being held hostage, called for the immediate release of the ship and its crew.

2 DECISIONS OF OTHER IMO BODIES. The Sub-Committee noted the outcome of MSC 107, MEPC 80 and C 129, as reported in document SDC 10/2 (Secretariat), and took action accordingly under the relevant agenda items.

3 DEVELOPMENT OF GUIDELINES FOR EMERGENCY TOWING ARRANGEMENTS FOR SHIPS OTHER THAN TANKERS.

General. The Sub-Committee recalled that MSC 107 had approved draft amendments to SOLAS regulation II-1/3-4 relating to new requirements for all new ships other than tankers of not less than 20,000 GT to be fitted with emergency towing arrangements (ETA), for adoption at MSC 108 and entry into force on 1 January 2028. The Sub-Committee also recalled that MSC 107 had agreed to develop a complete new set of guidelines for emergency towing arrangements on new ships other than tankers, based on, or as a revision of, resolution MSC.35(63), taking into account the justification for the work prepared by SDC 9. MSC 107 had also agreed that the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1) would also need to be amended.

Draft guidelines for emergency towing arrangements for ships other than tankers. There were three documents submitted in respect of this item, by Japan, China and IACS on which a number of views were expressed:

- the guidelines should not be overly prescriptive so as to provide flexibility for different ship designs while ensuring an acceptable level of safety;
- the proposed threshold value of 30,000 gross tonnage for a safe towing load of at least 1,000 kN may not be appropriate, given that the large windage area of pure car truck carrier (PCTC) and ultra-large container ship, in addition to their deadweight, would have significant effects on the requirements of the safe towing load;
- while equivalent for certain ship designs, it should also be taken into account that ETA may potentially be used by third parties and that, therefore, a uniform and simple design may be maintained;
- the proposal to substitute proto-type testing for non-pre-rigged ETA, as proposed, cannot be supported as the loose items of an ETA need to be tested;
- IACS unified interpretation SC113 on Emergency Towing Arrangements on Tankers - Prototype Test was approved as MSC.1/Circ.966 and any amendments to prototype testing may be incorporated therein;
- pre-rigged ETA for ships other than tankers should be optional as it may not be a feasible option for some ship designs; and,
- the use of high modulus synthetic ropes for towing operations should be carefully considered, due to their poor fire and friction resistance.

The Sub-Committee agreed to develop draft guidelines for emergency towing arrangements for ships other than tankers, based on annex 1 of document SDC 10/3 (Japan). Accordingly, the Sub-Committee established the Experts' Group on Development of Guidelines for emergency towing arrangements for ships other than tankers and duly instructed it, taking into account the comments and decisions made in plenary and documents SDC 10/3/1 (China) and SDC 10/3/2 (IACS).

Report of the Experts' Group. The Sub-Committee approved the report of the Expert Group in general, and in particular:

.1 noted the progress made in developing draft guidelines for emergency towing arrangements on ships other than tankers;

.2 noted the observation of the Group that the Guidelines for owners/operators on preparing emergency towing procedures (MSC.1/Circ.1255) might also need to be reviewed in relation to the procedural aspect as a consequence of the new requirement for ETAs on ships other than tankers;

3 noted the observation of the Group in identifying necessary amendments to the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1);

.4 will seek the Committee's authorisation for the possible expansion of the scope of the existing output, or post-biennial output on "Revision of appendices A and B of the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1)", as appropriate; and,

.5 noted the observation of the Group on the establishment of an intersessional correspondence group and invited interested Member States and international organisations to submit more information including data which might contribute to the determination of the strength requirements at the next session.

4 FURTHER DEVELOPMENT OF THE IP CODE AND ASSOCIATED GUIDANCE.

General. The Sub-Committee recalled that MSC 105 had agreed, with a view to the adoption of the new SOLAS chapter XV (Safety measures for ships carrying industrial personnel) and the International Code of Safety for Ships Carrying Industrial Personnel (IP Code) by resolutions MSC.521(106) and MSC.527(106), respectively, to a second phase of work. This would address outstanding matters, including clarifying the interaction between the IP and the Special Purpose Ships (SPS) Codes, incorporating provisions for passenger ships and, with respect to high-speed craft carrying IP, provisions for sleeping berths and for high-speed craft carrying more than 60 persons, under the new output title "Further development of the IP Code and associated guidance". It was also recalled that SDC 9, after consideration of document SDC 9/INF.3 (IMCA), providing IP Code Guidance, had invited interested delegations to liaise with IMCA in a view to developing a first draft of the Explanatory Notes.

Further development of the IP Code and related guidance. In the absence of any submission to this session and no substantial proposals for amendments to the IP Code and related guidance to its last session, the Sub-Committee agreed to invite submissions to SDC 11 on the matter but if no documents are received, will propose to the Committee that work on the output has been completed.

5 REVIEW OF THE 2014 GUIDELINES FOR THE REDUCTION OF UNDERWATER NOISE FROM COMMERCIAL SHIPPING TO ADDRESS ADVERSE IMPACTS ON MARINE LIFE (MEPC.1/CIRC.833) (2014 GUIDELINES) AND IDENTIFICATION OF NEXT STEPS.

General. The Sub-Committee recalled that SDC 9 had finalised, and MEPC 80 had subsequently approved, the Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life (MEPC.1/Circ.906). SDC 9 also re-established the Correspondence Group on Review of the Guidelines for the Reduction of Underwater Noise (MEPC.1/Circ.833) to continue the remaining work (next steps) on identifying ways to implement the Revised Guidelines and promote the work of the Organisation. With respect to the request by MEPC 76 to the Secretariat regarding potential donors, such as GEF, concerning the potential funding of a global underwater vessel noise project, the Sub-Committee was advised that the Sub-Division for Partnerships and Projects (DPP) of the Technical Cooperation and Implementation Division (TCID) has established the Global Partnership for Mitigation of Underwater Noise from Shipping (GloNoise Partnership) Project. The new joint project of IMO, UNDP and the Global Environment Facility (GEF) with a budget of $1,950,000 over a 24-month period was agreed between IMO and UNDP to commence in December 2023. The main objective of the project is to establish global stakeholders' partnership to assist developing countries in raising awareness, capacity-building and collecting information to assist the policy dialogue on anthropogenic underwater noise mitigation from ships. A partnership of Lead Pilot Countries (LPCs) is being created, providing support via engagement with IMO, from private sector and global strategic partners, including that from developed countries, in addressing the major environmental issue of underwater noise from shipping. The LPCs are Argentina, Chile, Costa Rica, India, South Africa and Trinidad and Tobago. Twinning Partners are Georgia, Madagascar and Malaysia.

Suggested next steps in addressing underwater radiated noise from ships (Action Plan). The Sub-Committee considered the report of the Correspondence Group on the Review of the Underwater Noise Guidelines (SDC 10/5), providing a revised reference chart on the URN management planning process to be used as a tool for raising awareness of the revised Guidelines and a list of suggested next steps in the format of an action plan. Also for discussion were 7 submissions and 5 Information papers leading to a lively plenary discussion in which the following views were expressed:

.1 while there are merits in standardising URN management planning/measurements methods, it should not limit the evaluation of the amount of URN reduction to only one fixed operational methodology;

.2 the development of training guidance for seafarers to raise broader awareness of URN enjoyed support;

.3 indirect measurements of URN, as proposed in document SDC 10/5/3, is a pragmatic approach but requires validation against direct measurements;

.4 with respect to potential conflicts between GHG reductions measures and those for URN reductions, shipowners, designers and suppliers should be dissuaded from practices which lead to such conflicts; the best compromise of URN and GHG reductions should be sought, not only from design considerations but also by a combination of both the design aspect for GHG reductions, such as propeller

design, and operational measures, including speed reduction in certain vulnerable sea areas;

.5 it is important to have a common understanding on the methodology used to estimate the amount of URN reduction from the various measures introduced in order to enable a consistent evaluation of the URN reduction in different phases of ship life, from the design and construction phase to that of operations; and,

.6 an "Arctic and Inuit Nunaat Implementation Framework" should be included in the Action Plan and Experience Building Phase as part of next steps in this work.

Establishment of WG 1. Having considered the above matters, the Sub-Committee established the Working Group on Reduction of Underwater Noise from Commercial Shipping. Suitable terms of reference were issued, taking into account the comments made and decisions taken in plenary, as well as all documents submitted under this item.

Report of WG 1. The Sub-Committee approved the report of the WG in general, and in particular to:

Revision of MEPC.1/Circ.906

.1 agreed to the draft amendments on the Revised Guidelines pertaining to the URN planning reference chart, with a view to approval by MEPC 82 and circulation as MEPC.1/Circ.906/Rev.1;

.2 requested the Secretariat to prepare a draft revised associated MEPC circular cover note that will reflect the modifications introduced to the Revised Guidelines;

Draft action plan

.3 noted the Group's discussion on, and the finalisation of, the draft action plan providing a mechanism to identify specific outcomes and indicative actions to further prevent and reduce URN from ships;

.4 invited MEPC 81 to note that the three-year experience-building phase (EBP) stated in the draft action plan, may need to be revisited for an extension of up to two years;

.5 endorsed the Group's consideration that until the EBP is over, the Revised Guidelines should not be further revised in order to allow time for evaluating the experience gained for recommendation to the MEPC, as appropriate;

6 invited MEPC 82 to encourage interested Member States and international organisations to take into account the outcome of the workshop on the "Relationship between energy efficiency and underwater radiated noise from ships" (SDC 10/INF.3) when considering the relationship between energy efficiency measures and URN;

.7 agreed to the draft action plan; and:

.1 as an urgent matter, invited MEPC 81 to endorse the draft action plan when considering the request of SDC 10 on the revision of the title of the output as "Experience building phase for the reduction of underwater radiated noise (MEPC.1/Circ.906)" and placing it on the provisional agenda of MEPC 82; and,

.2 subject to MEPC 81's endorsement, invited submissions to MEPC 82 to address the action items in the plan, as appropriate.

Guidance Document for the EBP

.8 noted the outcome of the discussion of the Group on the need for guiding the EBP; and:

.1 agreed to the draft guidance document on the experience-building phase (EBP) for the revised Guidelines on the reduction of underwater radiated noise from shipping to address adverse impacts on marine life (MEPC.1/circ.906), identifying the key areas for the EBP, with a view to being annexed to the final report of the Sub-Committee; and,

.2 invited MEPC 81, as an urgent matter, to note the guidance document on the experience-building phase (EBP) of the revised Guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life and invited interested Member States and international organisations to follow the guidance document when gathering, preparing and sharing experiences, data and research during the EBP.

6 AMENDMENTS TO THE 2011 ESP CODE.

Allowing the use of remote inspection techniques (RIT) for close-up surveys. SDC 10/6 (IACS), advised that, in their applicable unified requirements, remote inspection techniques (RIT) have already been established, as they offer safer surveys, decreased fault rate and reduction of cost of maintenance. They therefore proposed the use of RIT for close-up survey of the structure of ships during surveys under the 2011 ESP Code. However, in submission SDC 10/6/1, Bahamas et al. recommended that the Organisation should take a holistic approach on the use of RIT and to consider, inter alia, the limitation and conditions for using RIT plus the need to develop technical guidelines.
Following discussion, the Sub-Committee agreed in principle to the proposal by IACS to use RIT for close-up inspections. However, its use would not be limited to bulk carriers and oil tankers under the ESP Code, also the lack of technical requirements and oversight would necessitate further work. Subsequently, the Sub-Committee agreed that work should be undertaken intersessionally in a correspondence group which should be tasked to consider the proposal for amendments to the ESP Code, as contained in document SDC 10/6, taking into account the limitations, conditions and other elements listed in paragraph 3 of document SDC 10/6/1, and to develop guidelines on RIT under the ESP Code, which may be used by the Organisation as a template for more holistic guidelines in the future.

Establishment of the correspondence group. In order to progress the work intersessionally, the Sub-Committee established the Correspondence Group on Amendments to the ESP Code to permit the use of remote inspection techniques, under the coordination of IACS and instructed it, taking into account the discussions in plenary and document SDC 10/6/1 (Bahamas et al.), to draft amendments to the ESP Code, also guidelines for the use of remote inspection techniques for surveys. Instructions were also given to identify those provisions that would facilitate a holistic approach on the matter, for consideration by other IMO bodies, bearing in mind the ongoing work on existing output 1.18 on "Development of guidance on assessment and applications of remote surveys, ISM Code audits and ISPS Code verifications", and consider how to facilitate the development of such a holistic approach.

7 SAFETY OBJECTIVES AND FUNCTIONAL REQUIREMENTS OF THE GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR SOLAS CHAPTER II-1

General considerations for the development of goals, functional requirements and expected performances for SOLAS chapter II-1. In order to clarify the outstanding work under the current output in connection with that under agenda item 8 on Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements, to address both traditional and non-traditional propulsion and steering systems, the Sub-Committee agreed that:

.1 for existing SOLAS regulations II-1/28, 29 and 30, the development of functional requirements and expected performances should be concluded at this session;

.2 however, any amendments to the *Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III*, i.e. the development of functional requirements and expected performances as a result of amending aforementioned SOLAS regulations addressing non-traditional propulsion and steering systems (agenda item 8), may be necessary after these SOLAS regulations had been agreed to; and,

.3 following on from the above, the work under this output should be completed at this session with the functional requirements and expected performances for SOLAS chapter II-1 being appended to MSC.1/Circ.1212/Rev.1, for approval by MSC 108.

Report of the Correspondence Group. The Sub-Committee considered document SDC 10/7 (Japan), containing the report of the Correspondence Group on Safety Objectives and Functional Requirements for SOLAS Chapter II-1, providing the draft goals, functional requirements and expected performances of SOLAS chapter II-1, parts C, D and E, based on the identification of respective failure modes and hazards. Subsequently, the Sub-Committee agreed to instruct the Working Group to finalise the draft amendments to the Revised guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212/Rev.1) for SOLAS chapter II-1, parts C, D and E.

Report of WG 2. The Sub-Committee approved in general those parts of WG 2's report pertaining to this item, and in particular:

.1 noted the discussion on draft goals, functional requirements and expected performances of SOLAS chapter II-1 parts C, D and E; and,

.2 agreed the draft amendments to MSC.1/Circ.1212/Rev.1.

8 REVISION OF SOLAS CHAPTERS II-1 (PART C) AND V, AND RELATED INSTRUMENTS REGARDING STEERING AND PROPULSION REQUIREMENTS, TO ADDRESS BOTH TRADITIONAL AND NON-TRADITIONAL PROPULSION AND STEERING SYSTEMS.

General. The Sub-Committee recalled that MSC 105 had agreed to the output proposal in document MSC 104/15/8 (Austria et al.) on "Revision of SOLAS chapters II-1 (part C) and V, and related instruments regarding steering and propulsion requirements to address both traditional and non-traditional propulsion and steering systems", with two sessions needed to complete the item.

Draft revised SOLAS regulations in chapters II-1 (part C) and V regarding steering and propulsion requirements. With respect to the development of draft revised SOLAS regulations in chapters II-1 and V to address both traditional and non-traditional propulsion and steering systems, the Sub-Committee had seven documents for consideration. In the ensuing discussion, the Sub-Committee noted the following views:

.1 SOLAS currently would not provide for modern propulsion systems, leading to individual interpretations being made and resulting in more complicated designs and unfavourable requirements for azimuthing thrusters compared to traditional rudder-steered ships;

.2 there would be no justification for changing the existing requirements in SOLAS for traditional steering and propulsion systems, thus the focus of the work should be to develop requirements for non-traditional systems;

.3 testing, experience gained and lessons learned as the result of studies or casualties would have shown that there would be no significant accidents or incidents requiring amending regulations for traditional systems;

.4 care should be taken to reference a non-mandatory instrument in mandatory text, as proposed in draft SOLAS regulation II-1/28; and,

.5 the proposal in document SDC 10/8/3 to accommodate for GATE RUDDER in SOLAS, a non-traditional steering and propulsion systems with unsymmetrical rudder angle range, would not be supported as IMO instruments are drafted technology-agnostic.

The observer of IACS provided comments on the difficulties encountered by surveyors in detecting problems of steering gear and steering gear control systems during onsite survey.

Considerations for a goal-based approach. After general support for the goal-based approach taken for revised SOLAS regulations II-1/28 and 29, as contained in annex 2 of document MSC 105/18/1, the Sub-Committee noted the view of some delegations that the functional requirements, and in fact the new SOLAS regulations under development, should be applicable to both traditional and non-traditional steering and propulsion systems. The Sub-Committee concluded there would be no change of scope of the output and that consideration should be given to developing requirements for both traditional and non-traditional steering systems for newbuilt ships.

Instructions to the Working Group. The Sub-Committee agreed to instruct the Working Group on Development of Functional Requirements for SOLAS Chapter II-1 (WG 2), established under agenda item 7, to further develop draft amendments to SOLAS regulations II-1/3, 28, 29 and II-1/30, and V/25 and 26, based on annex 2 to document MSC 105/18/1. It was recalled that MSC 107 had limited the application of the new SOLAS regulations to new ships and instructed the Working Group to develop application provisions for the draft regulations in SOLAS chapters II-1 and V regarding steering and propulsion requirements, whilst retaining the current SOLAS provision for existing ships.

Draft amendments to related non-mandatory instruments. The Sub-Committee considered a number of proposals for amending related non-mandatory instruments following the draft revised amendments to SOLAS chapters II-1 and V to address traditional and non-traditional propulsion and steering systems, as contained in the applicable part of annex 2 to document MSC 105/18/1 (Austria et al). Following this, WG 2 was instructed to develop consequential amendments to specified non-mandatory instruments, based on the relevant part in annex 2 to document MSC 105/18/1, taking into account documents SDC 10/8 (IACS) and SDC 10/8/2 (Japan and ASEF), bearing in mind that the amended SOLAS regulations would apply to new ships only.

Report of the Working Group. Having considered the relevant items in WG 2's report on Development of Functional Requirements for SOLAS Chapter II-1 (SDC 10/WP.[4]), the Sub-Committee approved it in general, and in particular:

.1 noted the progress made in the preparation of draft amendments to SOLAS regulation II-1/28 regarding requirements on capability of going astern and stopping of ships;

.2 noted that the Group agreed to defer decisions on the following after the finalisation of the draft amendments to SOLAS regulations II-1/3 and 28 to 30, and V/25 and 26:

.1 application provisions for, and the development of, non-mandatory instruments;

.2 possible revocation of resolutions A.415(XI), A.416(XI), MSC.1/Circ.1398 and MSC.1/Circ.1416/Rev.1; and,

.3 potential need to amend or review other instruments;

.3 agreed with the Group that the method to determine steering angle limits should be submitted as a separate output; and,

.4 agreed to re-establish the Correspondence Group.

9 AMENDMENTS TO THE GUIDELINES FOR CONSTRUCTION, INSTALLATION, MAINTENANCE AND INSPECTION/SURVEY OF MEANS OF EMBARKATION AND DISEMBARKATION (MSC.1/CIRC.1331) CONCERNING THE RIGGING OF SAFETY NETTING ON ACCOMMODATION LADDERS AND GANGWAYS.

General. The Sub-Committee recalled that MSC 106 (November 2022) had agreed to include in its post-biennial agenda an output on "Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation concerning the rigging of safety netting on accommodation ladders and gangways", with one session needed to complete the item, assigning the SDC Sub-Committee as the coordinating organ, in association with the SSE Sub-Committee.

Draft amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331). Two documents were submitted on this issue, SDC 10/9 (IACS), proposing several amendments to the Guidelines (MSC.1/Circ.1331) for their improvement and to update references therein; also SDC 10/9/3 (China), commenting on the proposal in document SDC 10/9 (IACS).
Having noted general support for the proposals in both documents, the Sub-Committee agreed to consider the matter further when drafting amendments to MSC.1/Circ.1331 and also agreed not to include a reference to SOLAS regulation V/23 therein, as it would be outwith the scope of the output.

Proposed revised paragraph 3.8 on rigging of a safety net. Following discussion of document SDC 10/9/1 (Denmark et al.), proposing to clarify the recommendations in paragraph 3.8 of MSC.1/Circ.1331 by allowing alternative arrangements, such as side nets, which render the hazardous rigging of a safety net unnecessary, the Sub-Committee agreed to include a definition on "safety net" as proposed in documents SDC 10/9/1 (Denmark et al.), as well as in document SDC 10/9/2 (China), to be finalised by the Drafting Group.

Application provision for new equipment installed. The Sub-Committee agreed that new equipment installed should comply with the revised Guidelines on or after 1 July 2026, regardless of whether being installed on existing or a newbuilt ships.

Report of the Drafting Group. Having considered the recommendations of the DG on matters pertaining to this item, the Sub-Committee:

.1 noted the discussions concerning the implementation date of ISO standards in the draft amendments to MSC.1/Circ.1331;

.2 deferred a decision to SDC 11 regarding the remaining issues on paragraphs 2.1, 2.1bis and 2.3 in the draft amendments to MSC.1/Circ.1331; and,

.3 decided that the draft amendments to MSC.1/Circ.1331 be agreed with a view to submission to MSC 108 for approval and issuance, as appropriate.

10 UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS.

Draft interpretation of the performance standards for water level detectors (resolution MSC.188(79). After consideration of and support for the proposed amendment in paragraph 10.10 of SDC 10/10/2 (IACS) , the Sub-Committee agreed to the draft revised Unified interpretation of the *Performance standards for water level detectors on bulk carriers and single hold cargo ships other than bulk carriers* (resolution MSC.188(79)) for submission to MSC 108 for approval.

Interpretation for the harmonisation of the Industrial Personnel Safety Certificate with various SOLAS safety certificates. Following discussion, the Sub-Committee agreed to a draft new UI clarifying how to harmonise the Industrial Personnel Safety Certificate with various SOLAS safety certificates when their validity or their endorsement differ, for submission to MSC 108 for approval.

Steering gear spaces to be regarded as "safe position" under the means of escape from machinery spaces (SOLAS regulations II-2/9 and 13). Having agreed in principle to the draft revised UI of SOLAS regulations II-2/9 and 13 to clarify the term "safe position" used in connection with means of escape from machinery spaces for approval, the Sub-Committee instructed the Drafting Group on Unified Interpretations to consider the proposal in detail with a view to finalisation.

Revised interpretation of SOLAS regulation II-1/3-6 to ensure safe means of access to cargo and other spaces. Having agreed to exclude the draft interpretation of the wording "open deck" in section 1.5 and having noted that the annual inspections, mentioned in paragraph 10.19.2, referred to inspections by crew or competent inspector, but not the regular survey, the Sub-Committee agreed to the draft UI of SOLAS regulation II-1/3-6 to ensure safe means of access to cargo and other spaces, for submission to MSC 108 for approval and dissemination as MSC.1/Circ.1572/Rev.2.

Report of the DG. Having considered the relevant part of the report of the Drafting Group on Amendments to the Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation (MSC.1/Circ.1331), the Sub-Committee took action on issues pertinent to this item as follows:

.1 agreed to the draft amendments to the Unified interpretations of the Code on noise levels on board ships (resolution MSC.337(91)), with a view to approval by MSC 108; and,

.2 agreed to the draft amendments to Unified interpretations of SOLAS regulations II-2/9 and II-2/13 (MSC.1/Circ.1511), also with a view to approval by MSC 108.

11 AMENDMENT TO REGULATION 25 OF THE 1988 LOAD LINE PROTOCOL REGARDING THE REQUIREMENT FOR SETTING OF GUARD RAILS ON THE DECK STRUCTURE.

General. The Sub-Committee recalled that MSC 107 had agreed an output on "Amendment to regulation 25 of the 1988 Load Line Protocol regarding the requirement for setting of guard rails on the deck structure", with a target completion year of 2024 and applying to new ships only, for planned entry into force on 1 January 2028.

Proposed amendments to regulation 25 of the 1988 Load Line Protocol. With regard to the requirement for setting of guard rails on the deck structure, the Sub-Committee considered document SDC 10/11 (China), proposing amendments to regulation 25 of the 1988 Load Line Protocol with respect to the arrangements of guard rails, chains and bulwarks on exposed decks which are accessible to the crew during navigation. Following discussion, it was agreed to instruct the Drafting Group to incorporate the agreed amendments and to develop an application provision ensuring that the new requirements applied to new ships only.

Report of the Drafting Group. Having considered the report of the Drafting Group on matters relating to this item, the Sub-Committee:

.1 endorsed the Group's recommendation on the application provision in the draft amendment to regulation 25 of the International Convention on Load Lines, 1966, as amended by the Protocol of 1988;

.2 endorsed the Group's recommendation to invite further proposals on the requirements for "sag of chains" in the draft amendment to regulation 25(3)(d) of the 1988 Load Line Protocol to MSC 108, as appropriate; and,

.3 agreed in principle to the draft amendment to regulation 25 of the International Convention on Load Lines, 1966, as amended by the Protocol of 1988, with a view to approval by MSC 108 and adoption by MSC 109.

12 GUIDELINES FOR USE OF FIBRE-REINFORCED PLASTICS (FRP) WITHIN SHIP STRUCTURES.

General. The Sub-Committee recalled that, while the use of FRP had been supported in general by many delegations at SDC 9, concerns had also been raised regarding the

potential challenges, in particular concerning its recycling and its combustibility with respect to fire safety.

Revision of the Interim guidelines for use of Fibre Reinforced Plastic (FRP) MSC.1/Circ.1574. With respect to developing amendments to the Interim guidelines for use of Fibre Reinforced Plastic (FRP) (MSC.1/Circ.1574) (Interim guidelines), the Sub-Committee considered three submissions. That by Germany and CESA highlighting the latest advancements in R&D on the use of FRP elements, that by CESA containing draft terms of reference for an intersessional correspondence group, as well as an intersessional working group. The third, by IACS supported the performance approach for fire resistance, as suggested in document SDC 9/15/2 (CESA), proposing to further consider the main fire safety aspects, including the ignition potential of the FRP material; fire-fighting strategies and equipment; and the insulation requirements to protect the FRP to be maintained over the lifetime of the ship.

Potential conflict with SOLAS using fibre-reinforced plastics in ship structures. In considering as to whether requirements, stemming from existing SOLAS regulation II-2/11, as well as class "A" steel requirements in SOLAS, would conflict with the updated FRP Guidelines that would permit the use of FRP in structures, the Sub-Committee noted a wide range of views. Most telling of these was the need to focus on FRP recyclability and fire safety since FRP cannot be re-used, it does not readably decompose and easily becomes an organic pollutant. Following discussion, the Sub-Committee agreed that the scope of the output should not be expanded, neither to develop revised Interim guidelines, that would contradict current SOLAS provisions under the current instructions for this output.

Fire performance criteria for FRP. The following views on this aspect were expressed:

.1 an additional technical review should be carried out on smoke, toxicity and for the joints connecting FRP with the ship structure, as well as expanding the test regime for FRP to ensure the safety of the ship and persons on board;

.2 combustibility, flammability and smoke emission are important parameters to be taken into account when assessing FRP fire characteristics;

.3 with respect to proposed fire tests, it should be noted that, compared to steel structures, the structural core of FRP structures collapses more quickly under pressure, and consideration must also be given to the level and rate of thermal deformation; and,

.4 in light of the current work undertaken in reviewing the FTP Code, undertaken by the SSE Sub-Committee, it may be prudent to refer issues related to fire-testing of FRP to the SSE Sub-Committee.

Subsequently, the Sub-Committee agreed that the aforementioned issues should be taken into account in the correspondence group, for further review and development of appropriate amendments to the Interim guidelines.

Establishment of intersessional groups. The Sub-Committee, after consideration of the proposals in document SDC 10/12, agreed to establish an intersessional correspondence group (CG) under the coordination of Sweden but did not concur with the need to establish an intersessional working group. Terms of reference for the CG were given accordingly.

13 REVISION OF THE INTERIM EXPLANATORY NOTES FOR THE ASSESSMENT OF PASSENGER SHIP SYSTEMS' CAPABILITIES AFTER A FIRE OR FLOODING CASUALTY (MSC.1/CIRC.1369) AND RELATED CIRCULARS.

General. The Sub-Committee recalled that SDC 9 had commenced work on revision of the *Interim Explanatory Notes for the assessment of passenger ship systems' capabilities after a fire or flooding casualty* (MSC.1/Circ.1369) and related circulars, and had established a correspondence group to continue the work intersessionally. It was also recalled that MSC 107 had endorsed the Sub-Committee's recommendation to refer document SSE 8/15 (IACS), proposing clarification of the fire testing requirements for pipe couplings required to remain operational after a safe return to port (SRtP) fire casualty in the Interim Explanatory Notes (MSC.1/Circ.1369) to the correspondence group, inviting participation of fire safety experts therein.

Report of the correspondence group. The Sub-Committee considered the CG's report and subsequently:

.1 agreed with the proposed method of work to progress work on specific topics;

.2 noted the draft new structure and the organisation of the draft revised MSC.1/Circ.1369;

.3 noted the draft amendments to MSC.1/Circ.1369 in document SDC 10/13, annex 4; and,

.4 noted the view to take into account the industry standards listed in document SDC 10/13, during the process of revising MSC.1/Circ.1369.

Proposals on the minimum speed verification method for safe return to port. The Sub-Committee considered document SDC 10/13/1 (China), proposing to clarify the minimum speed verification method for safe return to port by specifying environmental conditions that should be assumed for the proposed method. Following discussion, the Sub-Committee agreed to instruct the working group to consider document SDC 10/13/1 (China) in the review of the Interim Explanatory Notes (MSC.1/Circ.1369).

Development of recommendations for crew training and familiarisation. The Sub-Committee considered document SDC 10/13/2 (ITF), proposing a concept note for the development of crew training and familiarisation provisions in the draft revised Interim Explanatory Notes (MSC.1/Circ.1369), for use by company, master and management level officers, in order to comply with the ISM Code. In the ensuing discussion, while the concept note was generally supported, the following views were expressed:

.1 while there are mandatory training requirements for seafarers, this would be a ship-specific training and familiarisation for officers and crew will be important in light of ever-larger passenger ships with large numbers of persons on board;

.2 since this proposal is on seafarer training and familiarisation, it should be sent to the HTW Sub-Committee for verification; and,

.3 the concept note would need to be more specific for the elements pertaining to safe return to port (SRtP), such as essential services, as well as the different roles of the crew in an incident invoking SRtP.

Subsequently, the Sub-Committee agreed to instruct the working group to consider document SDC 10/13/2 (ITF) in the review of the Interim Explanatory Notes (MSC.1/Circ.1369)

Report of WG 3. Having considered the report of the Working Group on the Revision of the Interim Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities after a Fire or Flooding Casualty, the Sub-Committee took action as follows:

.1 noted the deliberations of the Group on the structure of MSC.1/Circ.1369;

.2 noted the deliberations of the Group on draft amendments to MSC.1/Circ.1369;

.3 noted the deliberations of the Group on draft amendments and structure of appendix 1 to MSC.1/Circ.1369;

.4 noted the deliberations of the Group on alternative fuels and technologies; and,

.5 re-established the Correspondence Group on Revision of the Interim Explanatory Notes (MSC.1/Circ.1369) with the terms of reference as stipulated.

14 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR SDC 11.

General. The Sub-Committee recalled that, since the last meeting of the Sub-Committee, MSC had held its 107th session and had approved the Sub-Committee's biennial agenda and the provisional agenda for SDC 10. It was also recalled that MSC 107 had noted the biennial status report for the 2022-2023 biennium and had approved the proposed biennial agenda for the 2024-2025 biennium and the provisional agenda for SDC 10, as revised. Further, MSC 107 had agreed to include:

.1 in its biennial agenda for 2024-2025, a continuous output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels", assigning the Committee as the coordinating organ, in association with the CCC, HTW, III, SSE and SDC Sub-Committees and invited MEPC to consider being an associated organ;

.2 in the biennial agenda of the CCC Sub-Committee for the 2024-2025 biennium, an output on "Development of measures to prevent the loss of containers at sea", with a target completion year of 2025, assigning the CCC Sub-Committee as the coordinating organ, in association with the SDC, NCSR, HTW and III Sub-Committees; and,

.3 in its post-biennial agenda an output on "Revision of appendices A and B of the Revised guidance on shipboard towing and mooring equipment (MSC.1/Circ.1175/Rev.1)", with one session needed to complete the item, assigning the SDC Sub-Committee as the associated organ.

Proposed provisional agenda for SDC 11. Taking into account progress made at this session, the Sub-Committee prepared the proposed provisional agenda for SDC 11.

15 ELECTION OF CHAIR AND VICE-CHAIR FOR 2025. The current incumbents were duly re-elected.

16 ANY OTHER BUSINESS.

Experience gained in the application of the second generation intact stability criteria. The Sub-Committee recalled that the Interim guidelines on the second generation intact stability criteria (MSC.1/Circ.1627) and associated Explanatory notes to the Interim guidelines on second generation intact stability criteria (MSC.1/Circ.1652) had been issued as "Interim Guidelines" in order to gain experience in their use. In this connection, the Sub-Committee had for its consideration document SDC 10/16 (Denmark and WSC), reporting on the calculations made for the container ship **MAERSK ESSEN**, applying the second generation intact stability criteria, following its extensive cargo loss, and proposing that the Sub-Committee consider whether a comprehensive review of MSC.1/Circ.1627 was needed in order to evaluate the correctness of the calculations for parametric roll analysis, since the ship had passed level 2 vulnerability criterion for parametric roll. During consideration of four submissions on this item, the delegation of Japan, in response to submitters of document SDC 10/16 (Denmark and WSC) questioning the validity of the probabilistic approach/wave scatter data used for Level 2 C2, particularly for container vessels in worldwide operation, identified an underestimation of the natural roll period of the accident containership as the major reason of the false judgement.

The Sub-Committee concurred with Japan on the way forward on this matter, as set out in the last part of their statement, and agreed to:

.1 noted the information provided by Japan in its statement;

.2 invited Member States to submit relevant information to future sessions of the Sub-Committee or Committee, as appropriate;

.3 take into account all reports and studies submitted to the Organisation for a future revision of the Interim Guidelines (MSC.1/Circ.1627), including document SDC 10/16; and,

.4 invited the Committee to note that the roll period formula in the weather criterion is not suitable for ships longer than 140 metres.

In light of discussion, the Sub-Committee concluded that it was premature to revise the Interim Guidelines and that more data and experience in their application would be needed. In that context, the Sub-Committee reiterated the request to Member States and international organisations to submit reports and studies on the matter to future sessions.

Challenges in designing ships for alternative fuels. Document SDC 10/16/1 (Saudi Arabia), reported on the challenges in designing ships for alternative fuels, including, inter alia, larger fuel storage capacity needs for ammonia and methanol compared to ships carrying Heavy Fuel Oil (HFO) in order to sail over the same distance, as well as the impacts that it has on longitudinal strength and stability of the ship. Being mindful of ongoing Committee-work on the matter, the Sub-Committee agreed to refer document SDC 10/16/1 to MSC 108 for consideration under the new output on "Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels".

Expression of condolence. The Sub-Committee noted with great sadness the recent passing away of Mrs. Liubov Shvedova, Head of the Russian Translation Section of the Secretariat, and expressed its condolences to her family and the delegation of the Russian Federation and requested it to convey its sincere sympathy to her family and colleagues.

MEETING ACHIEVEMENTS.

In his closing remarks to the Sub-Committee, the Secretary-General congratulated the Chair and delegates in achieving a successful tenth session of the Committee as follows:

“You have engaged in extensive discussions on important matters this week and to this end we can all afford to pause now for a few moments and look back with a sense of satisfaction at this week’s achievements. I would like to single out from among all the noteworthy achievements of the week, the finalisation of the draft amendments to the guidelines on alternative design and arrangements for SOLAS Chapter II.1 which now comprise goals, functional requirements and expected performances which will ensure that alternative designs for ships and machinery match the performance of the prescriptive requirements of SOLAS. Work has also begun on developing goal-based SOLAS regulations to accommodate traditional and non-traditional propulsion and steering systems. In this regard I commend the sub-committee for its role in advancing the Organisation’s quest to develop goal-based regulations and guidance instruments so as to meet one of the primary missions of the Organisation, namely developing the highest practicable standards of maritime safety while also fulfilling the needs and expectations of a fast-changing industry which wants IMO to develop regulations that provide for flexibility in design. Your sub-committee is therefore at the very core of the IMO’s expertise,

committed to achieving the goals of this year's theme, 'Navigating the Future, Safety First'. I would also like to highlight the finalisation of the action plan intended to increase awareness uptake and implementation of the recently approved guidelines and progress with the provision of explanatory notes for the assessment and capacity of passenger ships after any casualty as a result of fire or collision, fire or flooding and the Committee's ability to deal with new technologies after the evaluation of remote provisions under the FP Code. All of this has been achieved under the able leadership of your Chair, Mr Erik Tvedt, supported by your very experienced Vice-Chair, Mr Jaideep Sirkar, whose combined skills have successfully guided us through all your constructive interventions and relevant technical comments. I would also like to express my sincere thanks to the Chairs of the Working Groups, the Expert Group and Drafting Groups we had at this session, for their hard work and in particular Ms Bornemann Christensen of Denmark, Dr Ota of Japan, Ms Poupaki of Germany, Mr Theocharis of The Marshall Islands, Dr Yoshida of Japan and all the coordinators of the Correspondence Group for their commitment, their high degree of cooperation and wish to progress the Sub-Committee's work over the past year, and, most importantly to achieve consensus decisions at this hybrid session. My appreciation also goes to the Maritime Safety Division who headed up preparatory work for the session and to all the staff of the organisation who have in some way contributed to the success of this meeting and who worked tirelessly to provide the required professional support to meet all the expectations of the IMO's membership, and thanks to the interpreters for facilitating communication during the course of our meeting. I would also like to wish your re-elected Chair and Vice-Chair all the very best for the next meeting and I do hope you will have a good rest and a lovely weekend. I wish you all the very best and look forward to seeing you at the next session next year. Thank you".

DATE OF NEXT MEETING. The next meeting, SDC 11, has been provisionally scheduled for January 2025,

End

Captain Paddy McKnight